INDEX TO THE FOURTY-FOURTH VOLUME

OF THE

MINING JOURNAL.

MEETINGS.

Alderley Edge, 547; Allt-y-Crib Silver-Lead, 240; Alamillos, 427, 1118, 1144; Ambrose Lake, 355; Anglo-Australian Gold, 427, 674, 709; Aruba Island Gold, 439, 1060; Assheton, 492 1369; Almada and Tirito, 566, 618, 1405; Aberdaunant Lead, 782; Antioquia (Frontino), 1088; Antwerp Tramways, 1294; Australian, 836; Australian Meat Agency, 978; Australian Central Gold, 1172, 1199; Azof Coal, 930.

Balmynhear, 380; Bedford Consols, 213; Bedford United, 355, 810; Belstone, 112, 781; Berehaven, 87, 140; Bettws Lantwit Colliery, 891; Blue Hills, 322, 683, 1117; Blue Tent, 1172, 1370, 1396; Blinman, 295, 303, 836, 864, 950, 1172; Blaen Caelan, 160; Blaen Cwmbach Steam Coal, 863, 1258; Bog, 79, 131, 212, 683, 1014, 1144, 1322; Bonvilles Court Coal and Iron, 32, 618; Botallack, 212, 565, 1266; Bowden Hill Manganese, 547; Boscaswell Downs, 213, 268; Brynambor Lead, 3, 548; Brynmawr Coal and Iron, 919; Bronfloyd, 140, 795, 836, 1173; Bagworth Colliery, 294, 986; Brookwood, 322, 810, 1285; Bradda (Isle of Man), 356, 782; Bolivar Railway, 426; Burra Burra, 408; Burrow and Butson, 726; Brazilian Consols, 594; Battle Mountain, 684, 810, 1313; Birdseye Creek, 709, 755, 781; Bilson and Crump Meadows Collieries, 753; Bremer, 1340.

Coal Consumers' Association, 519, 1238; Co-operative Mining Society, 1078; Court Grange, 893; Conglog Slate and Slab, 864; Colorado Terrible Lode, 675, 726; Cook's Kitchen, 520, 902; Colonial Bank, 3, 708; Cornwall Minerals Railway, 227, 619, 930; Costa Rica Gold, 304, 817; Cagliari, 1146; Canadian Titanic Iron, 481; Canadian Copper Pyrites and Chemical, 87; Cardiff and Swansea Smokeless Steam Coal, 807; Carn Camborne, 79, 408; Carn Brea, 160, 512, 865, 1230; Carmarthenshire Anthracite Coal and Iron, 978; Caldbeck Fells, 213, 269, 920, 978; Carrigan Rock Tin, 294; Camp Floyd Silver, 302, 809; Canal Street Ironworks, 1003; Cape Breton, 303; Cape Copper, 708, 753; Cargoll, 356; Castle-an-Dinas, 456; Cedar Creek Gold and Water, 52, 1256; Central Van, 23; Central Swedish Iron and Steel, 1088; Central American Association, 619; Cefn Brwyno, 482; Cesena Sulphur, 400, 809; Clifton Silver, 674; Crenver and Wheal Abraham, 295, 322, 1368; Chontales Consolidated, 482, 1201, 1226; Chesterfield and Derbyshire Mining Institute, 77; Chicago Silver, 304, 1237; Cwmebol Slab and Slate, 140; Cwm Elan, 675, 1033, 1071; Cwm Ricket and Maesnant, 1004; Cwm Dwyfor, 1378, 1406.

Darlington Iron, 294; Deer Park, 111; Denbighshire Consolidated, 24, 269; Devon Great Consols, 548, 594, 1314; Diamond Rock Boring, 112; Diamond Fuel, 1396; Dolcoath Tin and Copper, 53, 87, 430, 755, 1088, 1406; Don Pedro North del Rey, 428; Drake Walls, 356; Dunraven-Adare Coal and Iron, 675; Duchy Great Consols, 436; Dunsley Wheal Phœnix, 356; Dyliffe Lead, 240; Dynevor, Dyffryn, and Neath Abbey United Collieries, 1284.

East Pool, 79, 539, 762, 1033, 1257; East Gunnislake and South Bedford, 97, 548; East Black Craig, 160; East Treleigh Wood, 192; East Nant-y-Mwyn, 212, 322, 647, 683, 978; East Basset, 221, 1005; East Llangynog Lead, 268, 430, 512; East Seton, 380; East Chiverton, 436; East Wheal Lovell, 736, 1174; Eberhardt and Aurora, 875, 920, 949, 1032, 1312; Eclipse Gold, 130, 675, 684; Economic Life Assurance, 354; Eldorado Gold, 186, 238; Emma (The) Silver, 492, 519, 645, 682, 726, 1143; Englefield Colliery, 919; English and Australian Copper, 211, 919; Esperanza, and Puerto Gold Mines, in Guerrero, 1035.

Flagstaff Silver, 238, 428, 725, 780, 846, 893, 1099; Flintshire Lead, 79; Fortescue, 221; Fortuna, 427, 1118, 1144; Frank Mills, 408; Frontino and Bolivia Gold, 428; Furze Hill, 380, 1174; Fuller's Reef Gold, 809, 1059, 1143, 1313.

Gauley-Kanawha Coal, 51, 1004; Gawton Copper, 132, 619, 1088; Geological Society of France, 736; General Brazilian, 88; General Mining Company for Ireland, 111; General Mining Association, 538, 1256, 1341; Green Hurth Lead, 52, 539; Grogwinion Lead, 293, 356, 1173, 1285; Grosvenor, 1201; Great Rock, 88; Great Fron Fownog, 1369; Great Wheal Vor, 344, 675, 891, 1004, 1397; Great Wheal Lovell, 1229; Great Laxey, 398, 1089, 1145; Great Snaefell, 1294; Great East Foxdale, 483, 1237; Great Snowden Mountain, 1059; Great Caradon, 647; Great Western Colliery, 835; Great West Van, 902, 950; Gorsedd and Celyn Level, 132, 754, 1397 Gobbett Tin, 240; Governor and Company of Copper Miners in England, 400, 1199; Gold Mining Company of Yuba, 725, 893; Gold Run Hydraulic, 809, 1033; Gwydyr Park, 88, 465; Gunnislake, 408, 781, 1294; Glasgow Caradon, 132, 140; Glyngwillim Colliery, 538; Glenariff Iron Ore and Harbour, 753; Gioni Sulphur, 978.

Hawne Collieries, 266; Hornachos Silver-Lead, 754; Holcombe Valley, 674, 1404; Hockley Hall Collieries, 185; Hobb's Hill, 160; Hellin Sulphur, 22; Herodsfoot, 239, 684, 1173; Hingston Down, 594, 1071, 1314.

Ibstock Colliery, 88, 977; Ifton Rhyn Collieries, 1032; Imperial Brazilian Collieries, 159, 192, 295, 646, 1312; Independence Gold Quartz, 239, 428, 875; Industrial Coal and Iron, 284; Institute of Mining and Mechanical Engineers, Newcastle, 284, 472; Institute of Civil Engineers, 566; Iron and Steel Institute, 490, 540, 567, 975, 987; Islay Lead, 380, 1230; I.X.L. Gold and Silver, 1397; Javali, 354, 593; Jared Terrett Hunt and Son (Limited), 1117.

Killifreth, 221; Kirk Michael Lead and Copper, 294; Kapunda, 656; Kingston Valley, 835, 875, 1405.

Llanrwst Lead, 453, 1406; Llanharran Colliery, 727; Llynvi Valley Colliery, 321; Llynvi, Tondu, and Ogmore Coal and Iron, 930; Llay Hall Coal, Iron, and Fire-Brick, 344; Llangennech Collieries, 1284; Lancashire and Cheshire Certificated Colliery Managers' Association, 658; Lancashire Cotton Spinning, 959; Last Chance, of Utah, 248, 303; Lady Constance, 399, 986; Ladywell, 483; Levant, 88, 512; Lanestosa, 1005, 1031; Linares Lead, 427, 1118, 1144; Littledean Woodside Coal, 213, 565, 949, 1285; London and County Bank, 158, 863; London and Californian, 159, 682, 864; London Company, the, 1003; Lovell (The), 1117; Lusitanian, 400; Lydney and Wigpool Iron Ore, 322.

Malpaso Gold Washing, 22, 239, 1406; Marke Valley, 79, 408, 736; Maughold Head, 186; Mammoth Copperopolis, of Utah, 210, 491; Marbella Iron Ore, 221, 266; Manchester Geological Society, 364, 1190, 1292, 1414; Malabar Gold Washing, 1340; Medlyn Moor, 920; Melindur Valley, 646; Midland Boiler Inspection and Assurance, 938; Midland Institute of Mining Engineers, 276; Mid-Moonta, 269, 346; Mining Company, of Ireland, 87; Mold Mines, 713; Mold Argoed Colliery, 159, 213; Mount Dalby Lead, 294, 379; Mwyndy Iron Ore, 213.

Nant-y-Ricket, 32; Nant-y-Glo and Blaina Ironworks, 52, 1339; Nant-y-Ronen, 1060; Nangiles, 221; Native Iron Ore Company, 426; National Provincial Bank of England, 538; New Pacific, 60, 1396; New Dolcoath, 79, 295; New Sharlston Collieries, 192, 919; New Merrybent, 1266; New Pembroke, 221, 674; New Rosario, 1228; New Quebrada, 266, 790, 845, 1398; New St. Blazey, 736; New Trumpet and Lovell United, 269; New West Rosewarne, 709; New Zealand Kapanga, 646; Newport Abercarn Black Vein Steam Coal, 599; North Staffordshire Mining Institute, 53, 161, 378, 491, 636, 735, 1022, 1070, 1358; North Roskear, 213, 221; North Crofty, 456, 483, 684; North Treskerby, 483; North of England Institute of Mining and Mechanical Engineers, 853, 1106; North Hendre, 1200; Northern Institute of Mining and Mechanical Engineers, 635, 825; Nerbudda Coal and Iron, 510; Newfoundland, 1033.

Ohio, 186, 211, 675; Old Treburgett, 212; Orinico Gold, 346; Overseal Colliery, 456; Old Miners' Friendly Society, 707; Old Batholes, 892.

Parys Mountain, 160, 284, 985; Parbola, 512, 1258, 1294; Pannucilio, 645, 1238; Penhalls, 87, 430, 755, 1117; Penhale Wheal Vor, 248; Pedn-an-drea, 619; Pennerley, 683; Perkin's Beach, 1005, 1174; Pestarena United, 435; Plynlimmon, 863; Polbreen, 60; Port Phillip and Colonial, 87; Port Nigel, 977; Prince of Wales, 32, 380, 755, 1200; Prince Patrick, 132, 836; Providence Mines, 347, 684, 726, 1117; Peat Coal and Charcoal, 1146; Penstruthal, 1314; Prussian Mining and Ironworks, 1396, 1406.

Queen's Silver-Lead, 483.

Rhymney Iron, 221; Rica Gold Washing, 1406; Richmond Consolidated, 130, 1285, 1293; Rio Tinto, 595, 618; Richards and Company, 1379; Rookhope Valley, 268; Rosewall Hill and Ransom, 221; Roman Gravels, 436, 482; Royal School of Mines, 742, Royal Geological Society of Cornwall, 1209; Rossa Grande, 977, 1236; Ruby Consolidated, 328, 511, 864, 950, 1404; Russia Copper, 23, 1369; Russian (Vyksounsky) Ironworks, 1210.

Saturn Silver, 79; Santa Barbara Gold, 239, 1229; Sandwell Park Colliery, 966; Sierra Buttes Gold, 429, 1115; Silver Plume, 348, 977; Sicilian Sulphur, 347; Silkstone Fall Colliery, 304, 345; Skearne Ironworks, 617; Spearne Consols, 221, 269, 512; Spanish Hematite Iron, 344; St. Just Amalgamated, 4; St. John del Rey, 21, 675, 682, 1404; St. Stephen's Hematite Iron Ore, 51; St. Stephen's Tin and Copper, 539; St. Lawrence, Victoria, and Valentine Amalgated, 186, 435, 682; St. Agnes Consols, 590; St. Ives Consols, 978; Stephen Roe Diffusive Daylight Reflector, 1396; Scottish Australian, 483, 492, 675, 1266; Scotgate Ash Stone, 456, 709; Success, Rushy Cliff, and Nancy Consols, 240, 1174; South Ward, 79, 781, 1173; South Carn Brea, 79, 408, 763, 781, 1146; South Staffordshire and East Worcestershire Institute of Mining Engineers, 105, 496, 584, 608, 735, 1106, 1209, 1237, 1358; South Midland Institute of Mining, Civil, and Mechanical Engineers, 111, 270, 379, 491, 826, 938, 1042, 1190, 1292; South Aurora, 131, 243, 510; South Caradon, 131, 456, 781, 1117; South Prince Patrick, 132; South Wheal Frances, 160, 483, 810; South Wheal Crofty, 213, 547; South Tolcarne, 221, 684; South Great Work, 221, 684, 1200; South Condurrow, 240, 684, 1229, 1341; South Wales Colliery, 256, 930; South Cleveland Ironworks, 295, 808; Roskear, 356; South Kitt Hill, 356, 408; South Frances, 1257; South Roman Gravels, 1370, 1397; Somorrostro Iron Ore, 565; Society of Engineers, Westminster, 1124; Standhill Lead, 647; Stephen Roe Diffusive Daylight Reflector, 1060; Swansea Valley Steam Collieries, 617; Swansea Collieries, 1172; Sweetland Creek, 675, 683; Shotts Iron, 993.

Tankerville, 892; Taquaril, 520; Tecoma Silver, 158, 302, 407, 511, 1116, 1228, 1350; Thorps Gawber Hall Collieries, 891; Tharsis Sulphur and Copper, 481; Tincroft, 160, 512, 865, 1230; Tolima, 1370; Tyllwyd Silver-Lead, 781, 1294, 1340; Tyrone Coal, 87; Tretoil Tin and Iron, 294; Trumpet Consols, 294.

Utah Silver-Lead, 211, 1116, 1256; United Mexican, 512, 1227; United Bituminous Collieries, 644, 683, 1172

Victoria (London), 131; Van (The), 304, 346; Van Consols, 950, 1099, 1173; Van Railway, 435; Vancouver, 511, 1201, 1226.

West Chiverton, 3, 355, 727, 1042, 1155, 1257, 1341; West Polbreen, 4; West Milwr, 675; West Lucy, 112; West Stedan, 186, 355, 436, 565, 810, 894, 1237; West Great Work, 221, 380, 684, 1200; West Godolphin, 594, 920; West Wheal Tolgus, 221, 483, 684, 727, 920, 1201, 1406; West Goginan, 809; West Tankerville, 268, 303, 435, 512, 674, 709, 892; West Stiperstones, 329, 400; West Esgair Lle, 1201, 1229, 1314; West Mostyn Coal and Iron, 346; West Bryn Celyn, 1005; West Wheal Gorland, 408, 456, 1397; West of England Fire-Clay, Bitumen, and Chemical, 902; West Frances, 520, 902; West Maria and Fortescue, 684; West Caradon, 594, 684; Western Andes, 159, 893; Wheal Uny, 4, 380, 782, 1117; Wheal Coates, 60, 539; Wheal Owles, 79, 269, 408, 755, 1071; Wheal Basset, 88, 408, 755, 1089; Wheal Basset and Grylls, 619; Wheal Trelawny, 112; Wheal Vincent, 221; Wheal Unity Wood, 221, 548; Wheal Kitty (St. Agnes), 269, 647, 986, 1398; Wheal Seton, 284; Wheal Peevor, 322, 755, 1285; Wheal Margaret, 322; Wheal Russell, 328, 810, 1294; Wheal Mary Ann, 355; Wheal Crebor, 355, 565, 754, 1117; Wheal Tregoss, 465; Wheal Mary, 483, 736, 1370; Wheal Jane, 709, 727, 1406; Wheal Agar, 727, 736; Whitehaven Iron, 284, 304, 407, 836, 845; Wedgwood Coal and Iron, 646; Wellington Iron and Coal, 321; Welsh Ironworks, 321; Welsh Freehold Coal and Iron, 790, 863; Welsh Steam Coal Collieries, 807; Wicklow Copper, 456, 539, 1200; Willoughby, 863, 978, 1088; Wigton Hall Collieries, 1014; Working signals, A. Haghe, 1211; Wye Valley, 1144.

Yorke Peninsula, 511, 565, 593; Ynisawdre Coal, Coke, and Brick, 1146.

CORRESPONDENCE.

Aberystwith Silver-Lead Mining Company, 537
Agents, duty of to working miners, 157
Air-tubing, flexible and wrought-iron, for mining purposes, — as fuel, 1421 [G. J. May, 264, 319
Almada and Tirito Silver Mining Company, 185
Amalgamator and concentrator, Rickard's patent, 974
American Mines, R. Knapp, 615, 1170
— mining, progress of, 973
America, and its mining, N. Ennor, 209
Anglo-French Tunnel, the, W. Austin, 20, 371; 862
— Australian Bank, 1014
Anonymous writers, on, N. Ennor, 183, 425, 564
Antimony in Queensland, 1057
Anniversary, a notable—the first railway, 1069
Arbitration, 508
Ashantee gold, A. H. Church, 507
Australian coal, 236, 263, 277
— mining companies, 481 [1057, 1281, 1394
— tin, 396, 507, 643, 751, 833; H. A. Thompson, 861, 973;
Banker's advances, 1115 [J. S. Leigh, 208
Bartenechea Nitrate of Soda Company, at Yuqipue and Lima, Barn Mine, St. Kew, J. W. B. Dainty, 320
Bampfylde Mine, 481, 593; J. Richardson, 644 [liams, 210
Bensberg Lead Mining and Smelting Company, 185; T. Will-
Bessemer steel rail, the age of a, R. F. Mushet, 21
Blake's ore crusher—H. Marsden, Leeds, 591
Boring machinery in Cornwall, the use of, 752
Bog and Pennerley Mines, the management of, A. Waters, 917
British and foreign mining enterprise, R. Tredinnick, 184
— v. foreign mining, A. W. Thomas and Co., 701
Bristol Port and Channel Dock Company, 1103
Buyers of shares, caution to, 1127
Cagliari Mining Company, 1170 [Laws, 184, 452; 397
Carn Brea Mine, T. B. Laws, 21; and Tincroft accounts, T. B.
Camp Floyd Mining Company—mining in Utah, J. P. Sewell, 127 [537; 565
Camelford and Simonward as new mining districts, N. Ennor,
Cannel coal mining, 805 [of, 947
California, the mining districts of, J. White, 395; the wealth
Callington as a mining district, J. Buckingham, 672
Cape Copper Mining Company, 397, 453, 479, 507, 535, 762,
Capel Curig Quarry, S. Cliff, 1422 [805, 1421
Cedar Creek Gold Mines and Water Company, 1225, 1283
Central City, Colorado, destruction of, by fire, C. S. Richardson, 699
Certificated Colliery Managers' Association, a case for the, 671
Certificates of competency to underviewers and firemen, W.
Channel Tunnel, the, W. Austin, 20; 1038 [Hopton, 751
China-clay in Cornwall, 157
— and slate trades for the investment of capital, 834
Chontales Consolidated Mining Company, 344, 373, 396
Clapp's coal-cutting machine, 947
Clee Hill Colliery Company, 671; W. H. Harrison, 685; 707
Clifton Silver Mining Company, W. McCree, 424; C. S. Rich-
Cleator mines and furnaces, 1085 [ardson, 889
Cockburn's safety valve, T. and J. Hamilton, 364
Conglog Slate and Slab Company, E. Betteley, 975; W. Bishop, 1057; T. Horswill, 1115
Cornish mine management, 21, 49, 76, 104, 157
— mining, C. Bawden, 103, 128, 452, 509, 537, 564; R. Tredinnick, 425, 1171; 778
— mining, how mines should be worked to be made more successful and prosperous, 128 [dinnick, 889, 917
— tin mining, 208; smelting, and the Stannaries, R. Tre-
Copper merchants, and the Court of Stannaries, 1171
— mining prospects, 752, 1003
Colorado mines as a field for investment, D. Roberts, 47; J. G. Jebb, 75; C. Imray, 103; 261; J. Schamel, 291
— silver mines—Caribou Boulder County, C. S. Richardson,
— Terrible Mining Company, 974 [75, 103
Copper and tin in New South Wales, N. Adams, 20 [751
— smelting furnace, description of an ancient, G. Henwood,
— production of Cornwall and Devon, R. Tredinnick, 1031
— mining in South Australia, 1310 [509
Court Grange Silver-Lead Mines Company, W. B. Cobb, 372;
Corundum, W. P. Thompson, 451, 508
Co-operative collieries, 1365 [236
Coal a dangerous cargo, A. Vassard, 47, 78, 104, 128, 156, 183,
— fields of Ireland, 86
— trade—miners' strike, 328
— Mines Regulation Act, 371
— in England, on, N. Ennor, 343 [833; F. Hurd, 862
— cutting machinery, J. S. Jeans, 451; T. A. Warrington,
— Castlemain, 752
— Mining in Italy, P. Le Neve Foster, 777; W. J. Jacob, 1169, 1194, 1225, 1281, 1338 [862; C. Bradley, 947
— mining in India—the Kistnah district, F. Applegarth,
— and iron trades of the West of Scotland, R. Moore, 1141
Colliery accidents, A. Macdonald, 805, 833
— managers' negligence of, 1282
Collieries, Government inspection of, 1365
Crenver and Wheal Abraham, R. Symons, 1115
Cwm Shop—West Cwm Erfin—Melindur Valley, 1255; A.
De Broke Mine, the, 862 [Francis, 1283
Delabole slate district, 425, 537, 889 [Gardner, 396
Diamond Fuel Company, the, J. L. Price, 264, 700; E. Y.
— swindle, the, 917
— rock boring, 1057; M. G. Morgans, 1085
— rock drill—new system of mining, 1124, 1197
Disinterested views on Carn Brea and Tincroft, 397
Dividend and progressive mines, R. Tredinnick, 778
Don Pedro North del Rey Gold Mining Company, 328
Doubtful minerals, 1366 [917
Dukinfield Colliery, explosion at the, 707; T. Wynne, 805, 833,
Dynamite, 563
East Wheal Lovell, 50, 104; and its management, 77
— Cornwall and Devon stars, 76
— Seton, 344
— Llangynog Mine, 425, 1142
Eberhardt and Aurora Mining Company, T. G. Taylor, E. Applegarth, 1014; 1283
Eclipse Gold Mining Company, T. Faull, 395; F. R. Bluett, 451
Electricity, what is? R. J. Crickmer, 1047, 1253, 1309, 1367, 1421, 1170; E. Skewis, 1283; 1321
Electric lamps for lighting mines, 537
Eldorado Gold Mines, the, 293, 319
Elgar Mine, Cardiganshire, J. Trevethan, 104
Emma Mine, the, 21, 47, 75, 127, 155, 183, 185, 207, 236; H. Nasmyth, 319, 343; N. Bredemyer, 451; 452, 535, 591, 615; G. Attwood, 643, 699; 707, 1057, 1086, 1142
— and Eureka Mines, and the salting of these, and the Lawrence-Whitney arrest, H. Sewell, 77
Emmens's United Mines, 1087 [184
English mining, present and future, T. J. Barnard, 50, 88, 129,
— capital, and American mines, D. Roberts, 1057
— Channel, communication across, J. De la Haye, 1198
Ennor, N., on practical mining, 48, 76, 103, 129, 157; remarks on opening tin mines, 129; on anonymous writers, 183, 425, 564; Miners' Conversations—"Agent" and "John," 209; America, and its mining, 209; on mine reports, 237; on mines in St. Teath, 264; on time formation, 292; on the depressed state of mining, 319; on coals in England, 343; on lead and zinc mining in and near Wadebridge district, 372; "Mining" at, and writers from Callington, 425; on tin stamps, and the future of Cornish mining, 480; on Camelford and Simonward as new mining districts, 537
Ennor, the late Mr. N., R. Symons, 616
Eskdale Mine, R. Symons, 616
Explosives Committee, carriage of, &c., 509, 536
Festiniog slate vein, the, 1338
Financial Record of the month of May, R. Tredinnick, 616
Five-weeks system, the—payment of miners, 50, 184, 193, 210, 237, 265, 292, 320, 328, 344, 373, 397, 452, 480; R. Knapp, 509, 564; 537, 592; G. Rowe, 616 [975
Fitzroy hematite iron mines of New South Wales, E. A. Hickey,
Flagstaff Mining Company, 21; W. Maitland, 208; L. Forbes, W. E. Surtees, 265; 615; N. M. Maxwell, 685; and Last Chance, 699; and Tecoma, 762, 793; 834, 1142, 1170; 1283
Fortescue Tin Mine, 21, 50
French Guina, J. Eddy, 699
Fronlwyd Mine, the, 617
Fuller's Reef Company, 974, 1142, 1321
Glansevern Mine, 762
Glyn Mine (formerly Pen-y-Clyn), J. Lean, 1284
Gold Mining in New Zealand, G. F. Hosking, 20, 291
— Coast of Africa, G. Peacock, 183
— industry of Nova Scotia, 424, 479
— mining in North Wales, 509, 948
— mining in New South Wales, R. Adams, 833
— mines of Merioneth, 890
— bearing ores in California, reduction of, 1029 [1170
Great Laxey Mining Company, 425; G. W. Dumbell, 480;
— Wheal Vor United Mines, the death of, &c., 480, 509
— Western Coal Consumers' Company, 1085
— Kanawha coal field, the, West Virginia, U.S., 1114
Gunnislake, (Clitters) Mine, 210; district—recent dividends, 1031, 1057
Halkin Mountain, mining on the, 184
Hall Valley Company, Colorado, D. Roberts, 451
Hodbarrow Mining Company, 975; F. Barratt, 1003
Hydraulic gold washing, 563
— gravel mining in California, 833
Iceland, climate and labour in, 1031 [G. Rickard, 563
Improvements in mining—Blake's Stone-breaker—Dynamite,
Independence Gold Quartz Company, 902
India, notes on a journey in, in 1861, J. Harrison, 208
Ireland, the mineral wealth of, T. A. Readwin, 155
Iron mines of Cornwall, 778 [1113, 1141
— and Steel Institute, meeting of the, 945; at Barrow, 1001,
— in Queensland, T. J. White, J. Percy, R. Dountree, 947
— ores on the Exmoor Estate, North Devon, 948
— industries of Northamptonshire, R. Meade, 1337
Ironworks in Tasmania, 263
— for Alston, 752
Joint-stock investments, R. Tredinnick, 644
— Companies Acts—promoters' profits, 690
Kalosic gas, H. C. Bartlett, 425, 592; I. Baggs, 451, 479, 508, 536, 564, 592, 616, 643, 671; H. C. Bartlett, J. Quick, 479
Kellogg Gravel Hill, Arkansas, mining in, S. H. Nieman, 47
Kingston Valley, D. Forest, 975, 1003; T. Sopwith, 1369
Kit Hill, R. Symons, 1031
Kulu, Mr. Calvert's mineral grant in, 862
Landlords of Cornwall, to the, R. Tredinnick, 1003
Last Chance and Tecoma Mines, 104, 129
Lake Superior, mining on, 156, 291; H. Buzzo, 917
Laxey Mines, and their management, J. Polglase, 1087
Lead mining in Wales—the Machynlleth district, 291
— mining, 328 [Ennor, 372
— and lead mining in and near Wadebridge district, N.
— mining in limestone, C. Dodsworth, 425
— mining in Cardiganshire, A. Francis, 452, 480
— dressing-floors, 536
— ore standard, 643 [1422
Legitimate mining, R. Knapp, 49; 293, 372; E. Betteley, 1338;
Lime formations—mining education, J. P. Sewell, 237; N. Ennor, 292
Llynvi Valley Colliery Company, W. H. Forbes, 481
Machinery as applied to the underground working of mines, 1365
Maughold Head Mining Company, 158, 210
Mechanical mining, 948; McKean and Co., 973
Mellanear Mine, Hayle, 238
Melindur Valley Mine, H. Halford, 1283
Meteorology—the coming winter, 1366
Metallurgy, prominent phases of northern, 86
Metalliferous mining in the Highlands, J. Campbell, 480
— mines, returns from the, R. Hunt, 643
Mexico, and its mines, R. Tredinnick, 209
Mineral wealth of Queensland, 127, 207
— wealth of the United States, A. Brad[illegible]14
— veins or lodes, deep-seated, E. Pr[illegible]56
— statistics of the Kingdom of Sax[illegible]in 1871 and 1872, Dr. Burkart, 563
Minerals of Northamptonshire, the, [illegible]
Mineralogy, W. White, 1002, 1366, 1395
Mid-Cornwall Mines, 397
Midland Railway, the, R. Symons, 1142
Mining in 1874, prognostications of, R. Tredinnick, 21
— in the county of Yorkshire, 48, 1198
— and mining enterprise, R. Tredinnick, 48, 58, 1087
— present and future, 77
— enterprise—why so depressed? 104
— prophets, and mining enterprise, 89; R. Tredinnick, 129
— in Cardiganshire—the Darren and Bronfloyd districts, 128, 184, 319, 1367
— machinery, improved, 157
— on the Halkin Mountain, 184
— observations on, R. Knapp, 209, 292, 1282
— in Utah, 155, 235, 834 [ham, 537, 564
— in Cornwall and Devon, T. B. Laws, 265; J. Bucking-
— monopolies, H. Nasmyth, 291
— in New South Wales, R. Adams, 291, 396, 615, 1310; 1029
— in New Zealand—the Coromandel gold fields, 327
— in New Brunswick, 1029
— in Queensland, 343, 507, 1029, 1139, 1253, 1350, 1393
— the future of, R. Tredinnick, 372
— on the depressed state of, N. Ennor, 319
— in North Wales, 397, 918, 1338 [armon, 1421
— in Wales—insufficiency of capital, 398; parish of Llan-
— on the Pacific Coast, J. P. Clough, 423, 479, 591, 751, 1281, 1393
— at and writers from Callington, N. Ennor, 425
— in Montgomeryshire, 452
— in Tavistock, 509
— in Colorado, D. Roberts, 535; 1253
— in Germany and France, 563
— the science of, R. Knapp, 700
— in West Cumberland, T. Tonkin, 752
— in Cornwall—the Perran district, 895 [Co., 835, 862
— industries of Cornwall, how to revive the, McKean and
— interests of the West, R. Tredinnick, 948
— in Gwennap, 948
— in California—the Great Blue Lead, 957
— generally in 1874—the last restrospective view of, A. Francis, 1421
Mines, on opening up from surface, 48, 76, 236
— managers' salaries, 103
— the re-working of old deep, R. Symons, 128
— development, J. T. Blanchard, 183 [264
— in the St. Teath district, north of Cornwall, N. Ennor,
— on the stoppage of, C. Le Neve Foster, 328
— reports on, N. Ennor, 237
— improvements in lighting, 700
— of Cardiganshire, the, A. Francis, 752
Miners' Conversations, 49, 76, 157; N. Ennor, 209
— wages—the thirteen-months system—*see* five-weeks system
— conference, the, 414
— v. smelters, 975
Money market for September month, R. Tredinnick, 1057
Nant-y-Glo and Blaina Ironworks Company, 75
Nascent Copper Process, the, 974; S. H. Emmens, 986, 1057, 1115, 1171; 1030, 1086; J. Milton, 1115, 1142, 1394, 1421
Native Mines, our, C. Collyer, 1337
Nevada, mining in, during 1873, J. D. Emersley, 185; Great Comstock Range, 777
New South Wales, R. Adams, 20, 127, 207; coal fields, 736
— Great Consols Mine, 50
— Dolcoath Tin and Copper Mining Company, 103
— Quebrada Mining Company, 249, 263, 277; J. Thompson, 291, 305; A. Strange, 319; T. G. Gillespie, 328, 1337; F. H. Hemming, 1368
— Mexico, and its mines, C. S. Richardson, 263
— Pacific, the—silver mining, R. Knapp, 1197
Newfoundland Mining Company, 32; N. M. Byers, 58; 104, 1030; G. E. Webster, 1057
Nottinghamshire coal field, the, 47
North Rosewarne Mining Company, 21
— American Gold Mining Company, 75
— side of the Carn Brea Hill, R. Tredinnick, 265, 320
— Staffordshire Mining Institute, 945
Northern notes, 861 [833, 1014
Nova Scotia Gold Fields, 263, 293, 319, 396, 424, 479, 563, 707, — items, 777
Old Batholes Mine, 238
— Treburgett Mining Company, 265
— Talargoch Mine, 1003
"Original Correspondence" in the *Mining Journal*, remarks on the, 4, 5, 564
Ore, refractory, amalgamated without wasting, W. White, 264
— dressing machinery, 507; C. Dodsworth, 535; 1170
— the treatment of poor, 699
— separation of by magnetic power, F. J. King, 974
Pactolus and Babb Gold Washing Company, Yuba County, California, 236; J. L. Pond, 263
Parys Mountain Mine, 129
Pacific Coast, mining on the, J. P. Clough, 423, 479, 591, 751
Patent Law, the—specifications, W. P. Thompson, 1369
Peat, compressed—cheap fuel, A. Francis, 127, 157; E. Rowlands, 183; 591
Perran Consols, W. Ward, 293; and Newlyn district, 835
Pembrokeshire, mineral wealth of, 371
Pestarena United Gold Mining Company, A. Dean, 535
Pennerley Mine, the, 617, 656, 672, 890
Phosphate of lime deposits in Canada, 862
Pilgrimage to St. Gothard, a, 1069, 1097, 1124, 1169
Practical mining, on, N. Ennor, 48, 76, 103, 129, 157; 592
Preference shares, 424, 437 [1143
Prince of Wales Mine, J. Gifford, 238; 793; T. Rosewarne, — Patrick, South and North Prince Patrick, 1267
Providence Mines, 565; E. Trythall, 1253
Public companies' law, 862
Purchase hire of railway wagons, Donald Atkey and Co., 1113
Pyrites as a source of sulphur, iron, and copper, C. R. A. Wright, 591; J. Longmaid, 861
Quarry House Mine, Northumberland, C. D. Dodsworth, 75
Queensland, the mineral wealth of, 127, 207, 343, 507, 805, 1169, 1253, 1350
Quicksilver in Exeter, W. White, 643
Railway interests, our, R. Tredinnick, 372
— cheap Mineral, 752
— light, for mines, 974
— accidents, prevention of, 1031
Rating of metalliferous mines, 948
Remarks on the Correspondence in the "Mining Journal," 265, 293, 320, 328, 373, 397, 452, 481, 509, 1378
Re Shelton Clay and Tin Mining Company, W. Garty, 425, 708; F. Warwick, 452, 538, 509
Richmond Consolidated Mining Company, 155; C. W. Cook, 156; S. A. Postlethwaite, 183, 193; J. Elliott, 207; J. D. Power, 235, 423, 1394; J. D. Emersley, 423, 1030, 1253; J. P. Bridgewater, 1267; 1283, 1337, 1368
Rigi Railway, the, C. J. Harvey, 1394
Rock-drills—the Dubois-Francois, 20; E. Edwards, 47; the McKean, 47, 535, 889; 1321, 1395; T. A. Warrington, 889, 1321; 1366
Roman Gravels, the low price of, 1142, 1171; R. Tredinnick, 1254, 1331; 1284
Rookhope Valley Mine, 21; and Willoughby, 50
Royal School of Mines, London, 1003, 1179

rnwall Polytechnic Society, 945
f Cornish Mines, the, R. Tredinnick, 209
olidated Mining Company, M. Low, 538; 862
per Company, the, 1310
Clark Colliery, 1113
Mining Company, the, 707
ke Collieries Company, 947, 974; W. J. Jacobs, 1003, 1030, 1086, 1142
mineral statistics of in 1871 and 1872, Dr. Burkart, 563
of investments, R. Tredinnick, 103, 451, 644, 671, 958
re lead mines, the, R. J. More, 1284
Fall Colliery meeting 344; C. Minshull, 371
ines of Colorado, C. S. Richardson, 20
s, desulphurising and chloridising, J. S. Phillips, 208
d copper, extracting of from poor ores, 643
ning, the New Pacific, R. Knapp, 1197 [1181
unnel, and the commercial interests of France, 1169,
es as an investment, C. Bettoley, 616; E. W.
ad Mine, 644 [Jones, 672
outh Condurrow, 210; H. Waddington, E. J. Bartlett, 1209, 1254, 1284; W. Leach, 1254, 1311, 1368; 1321
— Wales Colliery and Smelting Company, 819
— Wales Quarrymen's Strike, 1085
— Wendron Tin Mine, 452
— Phœnix Tin and Copper Mining Company, 565
— Roman Gravels, 593, 617
— Prince Patrick (near Holywell), A. W. Thomas, 986; 1225
— Frances Mine meeting and report, R. Goldsworthy, 1339, [1395
pain, and its mineral wealth, 918
tratified limestone formations, H. Sewell, 507
trikes and lock-outs, 736 [1282, 1310, 1393
— the North Wales slate quarrymen's, 1141, 1197, 1253,
taffordshire engineers, and the machine coal-cutting experiments, 917
t. Dennis Consols, 1143; W. J. Thompson, 1267
team, condensation and expansion of—its history and progress, T. Craddock, 521, 549
t. Gothard, a pilgrimage to, 1069, 1097, 1124, 1169
t. Ives (Cornwall) Railway, 700
ulphur in Sicily, W. Shelford, 777
— in Iceland, 947; C. C. Blake, J. A. Hjaltalin, 1002; 1031; and mining in Italy, 1086
wansea Valley Steam Collieries Company, 593
an-yr-Allt Mine, J. B. Balcombe, 1339
lquarif Mine, notes on the, 591
asmania, on mining in, J. Hunt, 535
echnical Education—the Royal School of Mines, 1170; in Ireland, 1182
ecoma Mining Company, L. Forbes, 156; A. Malet, 395; J. D. Scott, 902; 1086; C. C. Adley, 1142; N. M. Maxwell, 1283; and Flagstaff Companies, 593
elegraphs, the, and Mr. Herring, 890
hames gold field, New Zealand, G. F. Hosking, 207
idal ship canals, W. Austin, 1142, 1170, 1198
in deposits of Australia, the, 32
— trade, the, 117
— in Portugal, J. Heale, 343
— mines, remarks on opening, N. Ennor, 129 [396
— products of Mount Bischoff, Tasmania, F. D. Wickham,
— stamps, on, and the future of Cornish mining, N. Ennor,
— saving of fine, 593 [480
— mining, past and present, 834
— ore, hurried treatment of, 851
— district in New South Wales, on the, 1002
— exports—New South Wales, R. Adams, 1115
— mining in Cornwall, 1031
— smelting in Australia, 1169
— mining in Australia, J. Hunt, 1197
— mining and its prospects, 1281
— miners and tin smelters, 1310
ransport without breaking bulk on mixed-gauge railways, 537
retoil and Carrigan Mines, W. Byers, 644
unnelling v. other modes of mining, 104
ywyd Mine, J. Trevethan, 752
nited Mexican Mining Company, 1170
tah Silver-Lead Mining Company, J. Longmaid, 755; J. P. Sewell, F. Bennett, 207; W. J. Lavington, 1337
— Territory, mining in, 155, 235, 834 [395
— the mines and mining districts of, B. A. Froiseth, 371,
— mining in, slides and faults, 371
— mining in, W. Bredemeyer, 395; retrospects, 931
an Consols, 1047; A. Francis, 1182
endors and purchasers of mineral property, 1197, 1225
ron United Lead Mine, 238
alker's improvements in railways and rolling stock, 592
allerawang iron and coal mines of New South Wales, 751
elsh mining prospects, 88
est Dolcoath Mine, 158, 266
— Caradon Mine, 266
— Cornwall, projected undertakings in, 397
— Mostyn Coal Company, 397 [ment of purser, 1087
— Seton meeting, proceedings at the, 480, 805; appointment
— Wheal Lucy, 481, 778
— Great Work, H. G. Sharp, 656, 701, 707, 778; the Cost-book System, T. B. Laws, 752, 805
— of England Fire-Clay Company, 889
— Cumberland Ironworks, 1113
— Chiverton Mine, 1153; J. Johns, 1199; 1225
— Tolgus—successful mine management, 1339
hitehaven Iron Company's mines, R Symons, 563; 889
— Collieries, 1141
heal Mary, Wheal Tregoss, and St. Dennis Consols, W. J. Thompson, 32, 1031; T. Parkyn, 77; 1171
— Barnard, 129
— Lucy, 129, 1031; W. Harris, 1115 [1171, 1198
ye Valley Lead Mining Company, W. White, E. Gledhill,
orkshire, mining in the county of, 48

MISCELLANEOUS.

bergairn Lead Mines, Scotland, 551
erophore, the, 67, 1302
ir as fuel, Owen Ross, 1348
lbert New Mill Company, formation of, 253
ltami Colliery Company, formation of, 117, 144
malgamated Association of Miners, 1160
merican mining market, the, 94
— iron trade, the, 254
— pig-iron, 958
— iron and steel trade, the, 275, 1407
— coal, 334, 442
— Institute of Mining Engineers, 567
— coal company, an, 383
— mines, and how to make money out of them, 706
nalytical chemistry, W. W. Pink, G. E. Webster, 78
nglo-French colliery enterprise, 806
ntimony mining and smelting in Canada, A. F. Wendt, 60
— ores, and their reduction, 162
nglo-French railway communication, 323
ppletreewick Mining Company—limited liability, 453
pplied science, recognition of—the citizenship of London, 727
pplied geology, and the late Prof. Phillips, 485
ruba, the Island of, 655
rthur Woolf, the life and labours of, 723
rt Workmanship in the City of London, 1230
sheton, Tan-y-Bwich, and Pantgwyn Mines, 223
ssayer, the Practical, O. North, 344
ssurance of colliery owners against strikes, &c., 768
tlantic and Great Western Railroad Company, 225
utogen Pure Gas Company, 789, 795
ustralian School of Mines, 38
— Agricultural Company, 147, 174
— tin—the tin-bearing country, New England, 200
— and Tasmanian tin, 634
— railways, 1048
— prospects, 1126
aryta—its manifold uses in the arts, Dr. Feuchtwanger, 89
arrow Shipbuilding Company's Works, 1061
anbury and Cheltenham Direct Railway Company, 795, 1215
axter steam-engine, the, 1076, 1090
earings for machinery, new material for, 406
ellavista Company, Peru, 190
ilboa Iron Company, 1104
ismuth, the metallurgy of, 464
last-furnace slags, utilisation of, 628
lasting with electricity, 555
— experiments in North Wales, 1134, 1161; in Scotland, 1384
— with gunpowder fired with electricity, 1329
lake's Stone-breaker—important inventions, 673
lowpipe determination of salts and minerals, 1192
olivar Railway Company, 335, 823
oiler explosions, the cause of, 761
olckow, Vaughan, and Co. (Limited), 1050
ristol Port and Channel Dock Company, 37, 581
ronfloyd Silver-Lead Mine, special reports, 3
rentwood Brick and Coal Company, formation of, 1378
road Oak Collieries Company, formation of, 65
rougham cab, the, 650
ritish enterprise in Costa Rica, 676
ureau, an examining, for foreign enterprise on the French market, 247
alifornia, the resources of, 1236
alumet and Hecla, and their astonishing success, 575
ambridge University, and the Technical Schools at King's College, London, 648
anadian Copper Pyrites and Chemical Company, 1148
ape Copper Mining Company, 470
— Breton Marble Mountain, 484; coals, 806
apital and labour in America, 582 [E. J. Bartlett, 756
— how to employ it profitably by judicious investments,
arbolene engine, the—new motive power, 936
arbonic acid gas as a motive power, 825
ardiganshire Mines, the, 672, 724
aterham Junction Lime, Whiting, and Cement Works Company, formation of, 525
halk as fuel, 227
hapel House Colliery Company, formation of, 65, 95, 1076
handa, Central Provinces, note on some of the iron deposits of, T. W. H. Hughes, 329
hicago Silver Mining Company, 702
hinese Polytechnic Institution, 923
hannel Tunnel, the, 992
harlotte United Mines, 1103
hina-grass fibres, Dr. Collyer, 1023 [of, 553
ity of St. Petersburg New Waterworks Company, formation
leveland, the crisis in, 634
lee Hill Colliery, 715, 1183
oal Trade, the, Annual Review, J. R. Scott 12
— in London, cost and consumption of, 20
— cutting by machinery, J. S. Jeans, 77; 362
— economic consumption of, 78
— mining in China, 86
— trade, the, and colliers' wages, 146, 1188
— mining resources of New South Wales, 148
— and iron fields of Virginia, D. T. Ansted, 162
— the economical use of on railways, 174
— under the sea, observations on rating of, T. F. Hedley, 190
— mining in Belgium, 226
— in Nova Scotia, 282, 498
— cutting and compressing machinery, 334, 903
— question, the, 362
— English abroad, 386, 796, 908, 1377
— mining in Russia, 415, 874, 901, 1061, 1272
— fields of Gloucestershire and Somersetshire, and their resources, 491
— Consumers' Association, 519
— exports, our, 526, 662, 742, 1020, 1132
— crisis in France, 528
— mining in France, 992, 1216
— in Australia, 655
— American, 690
— and iron in the United States, 742, 1076, 1126, 1160, 1216
— fields of the United States, T. S. Hunt, 756
— cutting machinery—prize competition, 796; W. H. J. Traice, 798; 880; 909, 918, 994, 1104
— colonial, 900
— and iron prospects, 908
— discovery of in the West Indies, 908
— in Italy, P. Le Neve Foster, 946
— Mines Act in North and East Lancashire, 966
— Mine Inspectors, 1048
— fields, new, 1070
— the consumption of, 1076
— mining in the Rhondda Valley, 1160
— mining in Italy, Capt. Jacob, 1182
— and iron market, transition period in the, 1216
— in India, 1300
— trade in 1874—a retrospect and a forecast, 1412
— trade, the City, 1412
olliers' wages, and the price of coal, 226
olliery workings in France—the thick coal seams, 139
— accident funds, 470, 582, 852
— managers, certified, 607
— accidents, and Government inspection, 824, 837, 1240
— drainage in Germany, 1077
— deputies, the responsibilities of, 1272
orundum veins in North Carolina, 270
— its history and uses, 672
opper-clad ship, a, 96
— mining in Mid-Devon, 455
— mining, and its prospects, 1240
ommandite system, the, 985
oromandel gold-fields—mining in New Zealand, 327
ornish mining, practical and scientific suggestions as to the present and future of, B. Kitto, 735
oruwall Minerals Railway Company, 281
— Tin and Copper Mining Company, formation of, 179
oke, and coke ovens, 66
— economic manufacture of, E. Copée, 275, 1238
olorado Central, the 874
ombinations of mineowners and miners, 852
o-operative trading, extension of, 707
— Bank, the, 966
onfederation of the employers of labour, 880
ompressed air, motive power from, 900
ommercial wealth, our, 923
ommissioners of Patents report, 965
renver and Wheal Abraham Mines, 1415
rystal Palace District Cemetery Company, 1159
yclopædia, Johnson's new universal, 1126
ean Forest railway accommodation, 608; rights of free miners in, 715; mineral fields, 873
etaching hook, Walker's, 1049
iamonds and gold in South Africa, 25, 214
— fields of South Africa, 327
— drill, the, A. Bassett, 872
— scandal of California, history of the, 874
iscipline in our collieries, 1020
ollar Recovery—Dollar Cove, 600
rawing-room steam-engine, 147
ubby Syke Mining Company, formation of, 1355
uke of Sutherland, and the Mining Engineers, 635
ukinfield Colliery explosion, the, 442, 499, 526, 714
ynevor, Dyffryn, and Neath Abey United Collieries Company, 1148
yliffe Mining Company, the, 296 [pany, 741
ynamite, a practical miner's experience with, 38; for land-clearing operations, 327; blasting with, 415; exploded by electricity in Dean Forest, 663; experiments with, 742, 1048, 1153, 1162; as an industrial agent, 779
ast St. Dennis Consols Tin Mine, 603
— and West Junction Railway Company, 605
"Earthwork Mensuration," C. R. Howard, 838
. Fisher and Company, formation of, 963
choes from the mining market, J. H. Crofts, 219, and following numbers
clipse Gold Mining Company, 136, 309 [lowing numbers
gar Silver-Lead Mining Company, formation of, 9
lliot, Mr. George, and the miners, 174
mma Mine, the, 173; and Mr. Park, 302, 335; S. F. Paffard, 556; 811, 819; and John Bright, 922; 1341
nglish coal abroad, 386
— companies, and American mines, 824
— iron in the United States, 1356
xplosives Committee, and the mining interest, 606, 742
xcelsior rock-drill, the, 68
xplosions in coal mines, how to prevent, J. Harrison, 61
xplosives, experiments on, 498, 574; modern, G. M. Mowbray, 1022; official reports on, 1295, 1423
xplorers', Miners', and Metallurgists' Companion, 210
inancial and Investors Protection Association, formation of,
igi and its productions, notes on, 334 [851
ive-weeks System—the payment of miners, 219
ire-clays of the coal measures, 444
— places, economic and healthful, Edwards and Son, 1068
ires in collieries, extinguishing of, 690
lorence Consols, P. Skewis, 756
oreign mining and metallurgy, 25, and following numbers
rench Coal Commission, report of, 881, 909
uel, the economic consumption of, 120, 161, 215, 219, 276, 327, 388, 1384
urnaces, Price's retort, 1061
— for roasting ores, revolving, 1371
auley-Kanawha Coal Company, 80
as from Kimmeridge coal, 363
— for fuel, natural, Rogers and Burchfield, 1125 [1006
eneral Engine and Boiler Company's non-condensing engine,
eological Society of London, 762
eological surveys of South Missouri, 190; of Victoria—the coal deposits, 554; 1236
eology of Upper Burmah, Kahn, and West China, 463
— of Geneva, Prof. D. Colladon, 1180 [1348
— in its relations to the arts and manufactures, D. Page,
ilpin County, Colorado, the mineral belt of, C. S. Richardson, 865, 1062
laisdale Whinstone Quarry Company, formation of, 253
lasgow Port Washington Ironworks, 1013
overnment Securities Debenture Company, formation of, 65
— inspection of coal and metalliferous mines, list of Inspectors, 67, 148; certificates of competency, 227, 254, 335, 852; Inspectors' reports, 1328; the examinations, 1358
old extraction—new machinery, 255
— mines of Lake Superior, 327
— mining in French Guiana, 434
— fields of South Africa, A. Bellville, 434
— in New South Wales, 463, 757
— washing companies in California, 463
— mining in New Zealand, 657
— Run Hydraulic Company, 702
— in Wales, 743, 873
rand Trunk Railway of Canada, 1239
reat Laxey Mining Company, 363
— Comstock Lode, and the Sutro Tunnel, 434
— Caribou Silver Mine, 454
— North Caradon, winding-up, 701
uibal fan, portable, 1371
unpowder pile driver, the, T. Shaw, 567
— the stowage and use of in mines, 1272
wannap mining district, the, 1043
ypsum digging in Sussex, 1061
andbook of Practical Telegraphy, R. S. Culley, 281
all-o-Lee and Stanfield Collieries Company, 767
ammer stamps, Rodda's improved Muller, 1049
edley dial, Davis's improved, 1423
ingston Down Mining Company, 1077
olcombe Valley Mines, 702
olidays and trade rules at collieries and ironworks, 1135
olywell Silver-Lead Mining Company, formation of, 415
orizontal non-condensing engine, 373
onduras, mining in, 737
omer Hill Colliery Company, formation of, 1159
ydraulic mine, a model, 1058
lumination of railway carriages, 1264 [gine, 1302
mray's helical pump, and Brotherhood's three-cylinder en-
ndustrial co-operation, 1076
ndian railways, 742
nce Hall Colliery explosion, 992
nvention, protection of, 1256
reland, mineral wealth of, 94
— the commercial future of, 162
rish Corporation, formation of, 94
ron trade, report of the Scotch for 1873, 10
— in Tasmania, 66
— in Canada, manufacture of, 810
— ore and iron trade of Northamptonshire, 886
— in Great Britain and the United States, 470
— trade in America, 658, 1183
— in Greece, 862 [1246, 1294
— and Coal Kings of the North, 723, 789, 818, 928, 1183,
— deposits of Cornwall, 723
— and iron ores of Northamptonshire, 964
— and Steel Institute, 992, 1034, 1061 [1240
— and steel, exports of, 1020, 1132; foreign competition in,
— ores, our, 1048
— in India, manufacture of, 1076
— in Lincolnshire, 1104
— trade, our export, 1160
— ore regions in the United States, 1349, 1386, 1407, 1413
talian Mineral Company, 935
.X.L. Gold and Silver Mining Company, 37
ohn Cockeril Company, the, 1188
udd and Crosby Reduction Works, 1091
'Kainotomon" rock-drill, the, 94, 528, 1209
alosic gas—light and heat without coal, 357, 406, 415
ehelland Consols Copper Mining Company, formation of,
illan and Three Crosses Colliery, 600 [145
irkleathan Mines, Cleveland, 734
nowelden's patent improved three-cylinder engine, 1209
unzel's combined phosphor bronze and soft metal bearings, 958 [37
ady Beaconsfield Silver-Lead Mining Company, formation of,
aurium Mines, the, 32
abour laws, Royal Commission on, 362, 1160, 1412
ead mines and miners in the North of England, 59, 120
— mining on the Halkin Mountain, 120
— mining in Wales—the Machynlleth district, 246
— mining in North Wales, successful, 1183, 1349
— mining in Caradon, 407
— and silver mines, our, 608.
— treatment of by steam, 1061
— and silver, the production of, 1411
ectures at the Royal School of Mines, on "Heat," 53; on "Metals," 105, 111, 161, 167, 214, 276; on "Motion and Consciousness," 326, 356, 378, 484, 490, 539; on the "First Principles of Chemistry," 1236, 1264, 1292, 1320, 1348, 1379
ime Regis Railway, the, 1070 [of 713
ive Stock Insurance Company of Great Britain, formation
ittle Rock Bridge Company, 1159
lay Hall Coal, Iron, and Fire-Brick Company, 453, 583
lynvi Valley Colliery Company, 795
lwyn Teify Lead Mining Company, 985
ocomotives, and colliery work, 1188
ondon International Exhibition, 1874, 472
— Auction and Warehouse Company, formation of, 823
ubricants, economic, Duncan Brothers, 599
ammoth Copperopolis, Utah, 140
achynlleth district, the, 246
alayan Peninsula (East India) Tin Mining Company, 734
agnetic needle, and mining plans, 880
— ore separator—special premium, 1020
achine puddling—the Danks process, 964
cHenry Mining Company, formation of, 581
cDonald, Alex., M.P., on his election as a member of the House of Commons, 167
editerranean Colliery Company, formation of, 795
etal Market, the Annual Review, 19
etalliferous Mines Regulation Act, 1188
etallurgy, the elements of, 724, 756, 837
ilner's Safe Company, 823
ineral wealth of Ireland, 94
— industry of Prussia, 118
— Statistics for 1873, 254; of Victoria, 1216
— of coal at the Vienna Exhibition, 768
— and how to distinguish them, 922
— resources of the United Kingdom, 1300, 1328
— resources of Bolivia, 1377
ine Machinery, improved, 1239
ining regions of the Pacific Coast, 10
— Syndicates, 39
— by machinery, C. Ball, 53
— interest in Parliament, 198, 691
— in Montgomery and Cardiganshire, 246
— Bureau in Paris, 282
— Bureau in California, 880, 890
— industry in Spain, 415, 600
— in Honduras, 583
— sketches, 627, 673, 805
— engineers, the, and the Duke of Sutherland, 635
— in Turkey, 662
— a new method of, Mr. Emmens, 662
— operations in Ireland, 673
— industry in Portugal, 690
— investments, progressive, 742
— at the Antipodes, 796
— in Northern Mexico, 890
— in India, 1161
— and technical education, 1188
— and mining dividends, 1240
— in Cardiganshire, 1245
— districts, sanitary state of the, 1356
ines regulation in Belgium and Germany, 987
— accidents, notices of, imperative, 1104
— Regulation Act—appointment of a colliery Inspector, 1384
iners' leaders, committal of for conspiracy, 118
— member of Parliament, the, 254
— wages question, the, 526, 582, 1216
— National Association, Conference of the, 554, 662, 1132
— and their leaders, 627
— Association of Cornwall and Devon, 724, 921, 936, 946
— and miners' associations, 1104
— palace, a, 1216
ica, 1015
orvah Consols, starting an engine at, 335, 344
useum of Inventions—practical demonstrations, 779
wyndy Iron Ore Company, 1076
y Holiday, 890
ational Funds Assurance Company, incorporation of, 844
— Miners' Association, Conference of the, 1309
ative Iron Ore Company, 65
atro-Metallurgy, 247 [633
ant-y-Ronen Silver-Lead Mining Company, formation of,
assau Phosphate Company, formation of, 879
ew East Lovell Tin Mining Company, formation of, 117
— South Wales Collieries Company, formation of, 225
— Quebrada Mining Company, 264, 282, 310, 335
— Guide to the Iron Trade, J. Rose, 658
— Civil Service Corporation, 707
— Rosario Silver Mining Company, 713
— Zealand, commercial progress of, 1076
— Consols Tin and Arsenic Works, 1125
ickel, and its uses, 1321
orthamptonshire iron ore, 499 [620, 648, 676, 706, 948
ova Scotia, the mineral wealth of, 335; the gold deposits of,
orth-Western Railway of Monte Video Company, 37, 605
— Wales, the industries of, 191 [407
— Lancashire and Cumberland Exchange, opening of the,
— Delabole Slate Quarry Company, formation of, 469
— Van Mining Company, formation of, 469
— German Peat Fuel Company, formation of, 553
— Prince Patrick Lead Mining Company, formation of, 935
orthern mining and metallurgy, 226
il lands of Canada, 110
— economic lubricating, Duncan Brothers, 1152
ld Batholes Lead Mining Company, formation of, 907
— Talargoch Lead Mining Company, formation of, 963
mnium Stock Trust, 65
re-stamping machinery, economic, 650
rganic chemistry for artizans, H. E. Armstrong, 172
verwinding in Collieries, preventing of, W. Walker, 270
utlying Government securities, 690
acific Coast, the mining regions of the, 10
arys Mountain Mines Company, 413
atent Law reform, F. W. Campin, 311; 1385
aving, patent ligno mineral, 59
eople's Coal and Colliery Company, 9
enzance Hematite Iron Ore Company, formation of, 329
endulum, the compound, S. C. Tisley, 434
eak Downs Copper Mine, Australia, J. Borwick, 191
eat for fuel, 415; machinery, 540 [sumption of
eel Park Exhibition, Manchester—*see* Fuel, economic con-
etroleum motor, the, J. Hock, 628
eat fuels, and their economic value, J. Plant, 658
eat Coal and Charcoal Company, 714
erpetual motion eclipsed, J. W. Keeley, 1386
ortable engines for mining purposes, 628
ort Nigel Lead Company, formation of, 497
ost Office Metal Trades Directory, 491
ope and Pearson (Limited), formation of, 1215 [in, 1349
russia, the mineral industry of, 118; management of mines
russian Mining and Ironworks Company, 1384
resentation to the manager of Dukinfield Colliery, 1042
uddling, on mechanical, 1124
ump, the McFarland rotary, 275
— a new and economic, F. Martin, 528
— a new mining, Mr. Tipping, 806
yrites residue, utilisation of, 120 [556
— as a source of sulphur, iron, and copper, Dr. C. Wright,
yrogen gas, heating large towns with, 1302
uarry House Lead Mining Company, formation of, 37
uarterly Journal of Science, 453
uicksilver trade, the, 296
uartz mining at great depths, 1298
ailway iron abroad, 88, 414, 554, 880; our exports, 174; in the United States, 198, 1272; in India, 582
— prospects, 146
— working, 334
— grouping, 648
— signals and accidents, A. D. Dawnay, 756
— of the United States, H. V. Poor, 762; 823
— progress in the Australias, 1240
— receipts from mineral traffic, 964
— cars, rolling, and mixed-gauge railways, Walter and Rigon, 1203
ating of metalliferous mines, 526, 606
ambler's Club, the, 817
egistration of new companies, 9, and following numbers
"Record of Geological Literature," 1384
hymney Iron Company—the difficulties of the iron trade, 936
ichards and Co., formation of, 1103
io Tinto Mines, the, 119, 363 [413
iver Plate and Brazil Telegraph Company, formation of, 197,
ock-drill and stone-borer, the Cranston, 866
ock-drill—the Excelsior, 68; the Warsop, 873 [491, 1315
ock-drilling machinery, Prof. de V. Wood, 373; T. B. Jordan,
ocky Mountain Mineral Concentration Company—new financial project, 676
oyal Commission on the labour laws, 362 [767
— Aquarium and Summer and Winter Garden Society, 762,
— Cornwall Polytechnic Society, report of the, 1058
— College of Science, Dublin, 1104
uby Consolidated Mining Company, 701, 736, 768, 819, 845, 881, 908, 1015
yhope Colliery, on the Wear, 901, 1015, 1043
afety-lamps, comparative tests of, Prof. C. Heisch, 607
altworks of Volterra, 1035
assa Forte Collieries Company, 921
emi-portable engine, a new, 1321
hafts, the new method of sinking, 575
ierra Madre Tunnel, the great, 10
ilber light, the—economic illumination, 779, 1125
ilver ores, chlorodising of—the Stetefeldt furnace, 938
ir John Rennie, the late, 985
ociety of Scientific Industry's Exhibition, 120, 161, 215, 219
outh Missouri, geological surveys of, 190
— Treburgett Mine, 603
— African diamond diggings, 702
— Staffordshire mines drainage scheme, 852, 1132
olar system, the true, 1068
omerset and Dorset Railway Company, 1075
pain, the mining industry in, 415, 600
pontaneous Combustion from the use of oils, 574
t. John del Rey Mining Company, 310, 1377
teelyard indicator, patent, J. Mackenzie, 867
tone-breaker and steam-engine, new combined, 728
team, the utilisation of waste, Mr. Spence, 167
— boilers at mines and ironworks, 275
— the generation of, Hurd and Simpson, 528
— engines, balanced compound, J. Bourne, 923
— shipping, modern phases of, 1328
terling investments, 289
trike in West Lancashire the, 1104
trikes superseded—the New South Wales collieries, 634
— and their cost, 1048
utro Tunnel Company, 37, 39
ub-Wealden exploration, 600, 690, 762
ulphur in Iceland, 900 [Rath, 1378
— in Sicily, and its reduction from the ore, Prof. G. Von
an-yr-Allt Silver-Lead Mining Company, formation of, 89,
asmanian Main Line Company, 145 [921
— tin, J. Bonwick, 331
ecoma Silver Mining Company, 1089
elegrams, economic, W. C. Thue, 270
errible Mine, the, Colorado, 113, 1125
estimonial to Col. J. Berton, 94; to E. Lever, 453
echnical education in Canada, 462
— education, 847, 922, 929, 977, 984, 1013
echnological Dictionary, A. Tolhausen, 1264
harsis Sulphur and Copper Company, 817 [197, 256
hames and General Lighterage and Transit Company, 168,
"Theory of Arches," Prof. W. Allan, 600
ime bargains at collieries, as to, 606
in trade—Cornish mining, 219
— mining in Cornwall, 246
— dressing machinery, recent improvements in, 255
— in the Straits of Malacca and Tenassarim, 378
— mines of Gippsland and Latrobe, 378
— in New South Wales, 463
rades Union Congress, the, 94 [Adams, 1209
ramways, light and economic, 690; rolling stock, &c., J. H.
ransport without breaking bulk on mixed-gauge railways,
redegar Iron and Coal Company, 387 [437
umacacori Mining and Land Company, 248
tah, the mines of, 113, 591, 1199
— Mining industry of, 486
nited States Rolling Stock Company, 791
— States, mineral wealth of, A. Brady, 1114
apours, prevention of noxious, 175
aluation of Property Bill—rating of lead mines, 606
eins in limestone—the permanence of, H. Sewell, 529
entilation of Mines, the, 310, 406
ictoria, Geological Survey of, 1236
oussoir arches—practical science, 1398
eille Montagne Mining Company, 648
arming of railway carriages and stations, 146
aring rock drill, the, 528 [mation of, 117
ayne's Merthyr Steam Coal and Ironworks Company, for-
ashoe gold and silver process, the, 655
assel Grove Estate—South Staffordshire coal field, 881, 910
earmouth Colliery, on the Wear, 1043, 1154
elsh Freehold Coal and Iron Company, 37
— mines and ironworks, a week at the, 854, 873
"Westward by Rail," W. F. Rae, 837
est Mostyn Coal and Iron Company, formation of, 37, 1384
— Great Work, winding up, 701
estern of Canada Oil Lands and Works Company, 110
ellington Iron and Coal Company, 309 [37
hittington and Sheepbridge Colliery Company, formation of,
icklow Copper Mine, the, 38
igginton Hall Colliery Company, formation of, 553, 605
ine, pure, for English consumers, 929
orkings under the sea, J. Prestwich, 789
ulfenite, or molybdate of lead, 89
ye Valley Lead Mining Company, formation of, 879, 1130
ye Valley Railway Company, 497
heal Mary Tin Company, 763 [1264
— Mary Ann, remarks on the lode at, C. Le Neve Foster,
orke Peninsula Mining Company, 442; R. Sanders, 455, 486; 958, 1130
orkshire coal field, extraordinary development of the, 585
nisawdre Coal, Coke, and Brick Company, 661

PATENTS.

luminous compounds, Dr. Archibald, 817
nti-corrosive composition, H. P. Scott, 3
rtificial stone pipes, J. Fattrell, 902
sbestos, treating and working of, T. Hyatt, 443, 737, 901; J. Cleghorn, 1202
tmospheric telegraph, an improved, Mr. Guattari, 866
earings, a new composition for, S. Cohne, 810
lown-out shots, R. S. Norris, 648
oiler feeder, automatic, R. Rafel, 63
oring engines, C. J. Ball, 556
— and drilling tools, Smith and Coventry, 628
rick-making machines, T. C. Fawcett, 702; W. Steven, 1146
aloric engines, N. A. Otto, 59
arburettors, Spice and Hartley, 195
arbonates of baryta and strontia, Daudenant and Verbert, 1154
ement, Major Scott, 737
oal-cutting, C. Hanson, 9; J. Lucas, W. Nichols, 269; G. Worsop and H. W. Hill, 437; J. G. Jones, 553; R. S. Norris, 798
— raising and moving of, A. Lawton, H. H. Gordon, 5
— tar products, Lowe and Gill, 1155
opper, precipitating of by means of tin scrap, Prof. S. Hunt, 921
— welding of, Messrs. Rehbein, Roberts, and Brocchus, 966
— ores, treating of, F. Zwicki, 1154
oating metals, Capt. W. C. Nangle, 798
oke ovens, J. Marley, R. Thompson, 63
oking coal, H. Aitken, 817
iamond drills, C. A. Terry, 935
arth auger, improved, W. Sandlin, 922
lectro-magnets, winding with insulated wire, C. W. Cooke, 63
— plating, improvement in, S. L. Delalot, 523
lectric alarm-lamp for mines, Hyde and Aldis, 620
ngines and pumps, G. A. Teulon, 1126
— portable, Clayton and Shuttleworth, 1155
xcavator, a new, R. Stone, 280; D. Rowan, 650
ettling, a new, Wall and Penn, 676
uel, a new, Messrs. Simpson, 104, 756
— economising, E. Freville, 105, 113; J. Leigh, 605; Messrs. E. Davis, 685; J. G. Kirtley, 1015

Fuel, artificial, J. Hunt, 89; A. M. Clark, 519; W. Clark, 600; W. A. Lyttle, 648, 737; F. Page, 702; G. H. Forbes, 737, 810; E. Lowe, 905; Prof. Hahn, 918; A. C. Corbett, 1005; W. Radeke, 1126; J. T. Daley, 1147; J. A. B. Williams, 1202
— Liquid, J. H. Thorp, 789
Furnaces, H. C. Carver, 248; H. Hathway, 1154
Gas, manufacturing illuminating, W. H. Spencer, 9
— analysing of, L. H. Orsat, 89
— engines, Haseltine, Lake, and Co., 648
— waste, T. E. Williams, 810
— and gas making apparatus, J. Somerville, 1005
— making, improved system of, A. Malam, 1154; D. Hulett, S. Chandler, 1202
Galenite, J. David, 1202
Glass, ornamenting of, W. Sutherland, 810
Governor, a new, R. Rankin, 1159 [Fenton, 757
Gunpowder, the manufacture of, Col. B. Weimer, 579; J. Hydrocarbon, J. Hock, 959
Incrustation, removing and preventing of, R. A. Ray, 50; A. Smith, 1202
Ingots, casting of, Mr. Leffler, 1157
Iron ores, C. Cochrane, 50
— converting into steel, C. Binks, 65
— alloys, new, 148
— puddling of, I. G. N. Alleyne, 903
— and steel, J. G. Willans, 1154; J. V. Saint Day, 1202
Lead Ores, treatment of, P. E. de Winocq, 96
Lead Ores, treating of, Luck, Son, and Rozan, 1155
Level, a new, W. E. Gedge, 1154
Lock, patent safety facing point, R. Luke, 434
Lubricant, a new, J. Lundy, 464; O. Trossin, 484
Man-engine, P. Van Dyk, 96
Metallic alloys, H. Hahn, 437
— compositions, E. P. H. Vaughan, 579, P. A. Muntz and T. B. Sharpe, 906, 1051
— fumes, condensing and collecting, 1051
Metals, plating of, H. T. Brownell, 59; casting of, W. Hackney, 110; Crowther and Morgan, 373, 485; treating of, G. Byron, 437; treating with gases or vapour, Kirkwood and Smith, 958; moulding and casting, R. L. Hattersley, 1154
Mining tools, W. Stevenson, W. Ree, 523
Motive-power, a new, F. Hurd, E. T. Simpson, 200; G. Haseltyne, 519; W. Perch, 655; F. G. Gilles, 806; improved, R. M. Marchant, 979
Moulding and compressing, B. D. Healy, 1180
Ores, separation of, F. J. King, 167
— treatment of poor copper and silver, T. J. Barnard, 601
— treatment of, F. J. King, 847; S. R. Krom, 1147; A. M.
Overwinding, prevention of, W. Walker, 219 [Clark, 1154
Peat, improvements in preparing, J. Hunt, 111; J. Stephens, 171; F. Hinton, 248; A. Nourey, J. Massey, 277; D. J. Kennelly, 279, 373; R. Milburn, H. Jackson, 434; fuel, R. Stone, 437; A. Dudgeon, 798; W. Walker, 903; A. Barff, J. Kidd, 1126; W. B. Hays, 1202
Petroleum, A. L. Rawson, 1211
Ponteen for raising sunken vessels, J. Pullar, 555
Protecting composition, a new, J. C. S. Heywood, 817
Puddling-furnaces, rotary, Coley, Robson, and Price, 140; E. S. Casson, 548; Sir J. G. N. A. Keyne, 838, 903; S. and C. Newton, 1005
Pumps, W. H. Brookes, 938; Williamson and Parsell, 1239
Quick-silver, purifying of, J. B. Randol, C. W. Wright, 139
Railway signals, S. H. Emmens, 65; and switches, W. Smith, 523 [Ragon, 1203
— cars, rolling, and mixed-gauge railways, Walker and
Rock-boring, Brydon and Davidson, 9, 59; J. A. McKean, 65; R. J. Gottheil, 162; Haseltine, Lake, and Co., 648; W. W. Dunn, 900; C. Ferroux, 987; percussive, Major Beaumont, 1155; R. Brydon, J. S. Davidson, 1202
Rotary engines, J. G. Jones, 275
Ruby Consolidated, 22
Safety apparatus for mines, new, E. T. Hughes, 838
— lamps, J. B. Stone, 484; S. Armitage, 890
— valves, J. Radford, 790; P. Samson, 810
Semi-steel, C. J. Cameron, 89 [Heatherington, 523
Separating substances of different specific gravities, A.
Shaft-coupling, new—immediate repair of broken shafts, C. F. Varley, 1183
Silver, new imitation of, M. Pirsch-Vaudvin, 139
— extracting from its ores, J. Douglass, 485
Slag, utilisation of, C. Wood, 434
Smelting, M. Rae, 63; G. W. Hart, 553
Smoke, furnaces for the prevention of, G. Nimmo, 555
Stamping mill, and roasting ores, P. J. Mitchell, 838
Stone, new artificial, J. Fotrell, 373
Stone-crushing machinery, C. J. Ball, 373; Messrs. Hide,
Steam-engine, direct self-acting, W. D. Hooker, 143; Harmignies, 959; valves, J. B. Terrace, 961; W Northcott, 1087
— boilers, J. Owen, 464; Mr. Vaughan, 600; H. W 1060; C. Smith, 1154
— governor, J. F. Renard, 780
Steel, manufacture of, M. Gallet, 175
Sulphur, W. H. O'Shea, 737
Sulphuric acid, manufacture of, H. Sprengel, 434
Sulphates of soda and potash, W. Hunt, 1061
Tinners' waste, R. Ricketts, 9 [Thomas, 1060; 1
Tin and Terne plates, D. Edwards, 737; Hopkins, Rees, and
— and lead piping, J. J. Harrop, 900
— plate cuttings, J. Stuart, 1155 [man, 270
Traction machinery, C. Johnson, 20; R. C. Parvin, N. Over-
Tunnelling, D. C. Haskin, 59
Wolfram, utilisation of, Dr. Jones, 600
Zinc alloys, J. Wright, 275; fumes, collecting and condensing, P. A. Muntz, 434

OBITUARY.—Prof. J. Phillips, 444; N. Ennor, 580; C. Karkeet, 600; Sir W. Fairbairn, 910; J. Crofts, 935; Capt. Garby, 989; G. W. Southern, 1050; Capt. J. Faull, 1260

THE RESOURCES OF NEW MEXICO.

The immense mineral wealth of New Mexico has already been frequently referred in to the *Mining Journal*, and, as every movement made to colonise the State will facilitate the successful development of its minerals, the satisfactory progress of the UNITED STATES LAND AND COLONISATION COMPANY will be very generally gratifying. The company possess a property in New Mexico of undoubted value for agricultural and colonisation purposes, and, as they are taking the necessary steps for turning it to advantage, more attention will be directed to the Territory, and the working of the mines will follow in due course, contributing equally to the benefit of the mining and agricultural communities. Mr. D. G. Bruce-Gardyne, one of the directors, has recently visited the property, and in an elaborate report to the board states that the chief feature of the Montoya and Baca grants now owned by the company is the plains of many thousand acres, some undulating, others level, except where broken by mesas or table-lands, which rise suddenly, and in some places precipitately, from the plain level. The larger of these mesas are pierced by canyons, which afford shelter for the stock from storms, and add greatly to the picturesque appearance of the district. The canyons are broken into rocky bays, where dwarf pines, scrub cedars, and other shelter-yielding trees grow plentifully. The tops of the mesas, like the plains below, are generally covered with grama, and other sweet grasses; and one of them of great extent (on the south of the estate) has acquired the name of the "mesa rica," from the abundant pastures which it affords. The Montoya grant, although well wooded, appeared generally rocky and precipitous, reminding him of the gorges in the Rocky Mountains, and may hereafter be found to yield mineral wealth in as great profusion as the higher ranges of Colorado and New Mexico.

The drought which has visited with almost unexampled severity the Western States and Territories of the Union seemed to have produced less effect upon the Montoya grant. The grass was dry and burnt up, but the nourishing qualities of this standing hay were best shown by the strikingly healthy appearance of the stock. Although but little rain had fallen since the early spring—the usually rainy months of June and July having been of exceptional dryness—they almost invariably found abundant water in the water-courses on the estate, and the greenness of the cottonwood trees along their banks showed that the streams had not failed even during the heat of the summer. At the North Camp, about 18 miles from the Mule Springs, where they entered the company's estate, they found that some 500 or 600 head of cattle of all ages had been driven into the corral that the calves might be cut and branded, so that he had an excellent opportunity of inspecting so much of the company's stock. The half-bred calves and yearlings had lost much of the loose and straggling build of their Texan mothers, and had acquired in a large degree the broad girths, square forms, and level backs of their short-horn sires. The richness of the alluvial soil is very striking. As evidencing what the soil of New Mexico can produce under favourable conditions, Mr. Bruce-Gardyne mentions that in the bishop's garden, at Santa Fé, he saw apples weighing considerably over 1 lb., cabbages of from 50 to 60 lbs., and beets of about 40 lbs. Southern Colorado is celebrated for its apple and pear trees.

The general impression which Mr. Bruce-Gardyne formed of the company's estate, taking it as a whole, was that it is admirably adapted for the successful and profitable raising of all kinds of sheep and cattle. The respective merits of these two classes may thus be summed up. Sheep require more constant and unremitting care, are more influenced by climatic changes, and are generally (though this defect has, he believes, never shown itself among the hundreds of thousands of sheep in New Mexico) more liable to epidemics. Again, although sheep can be driven without difficulty 175 or 200 miles to the railway, and, if judiciously managed on the road, will arrive in good order at their destination, yet wethers do not command, at present at any rate, so ready and profitable a market as steers; on the other hand, the wool can be carried easily and cheaply to the Eastern markets, finding there at all times an immediate sale, and yielding quick returns. Cattle do not require so much attention, and are not so liable to disease; they can be readily sold on the spot, or driven to the railway and shipped to the markets of the East or West, but as steers do not reach their full value until they are at least three years old, the return of profits is not so immediate from them as from sheep, which yield a crop of wool in their first year. On the extensive property of over 700,000 acres owned by the company there is, in his opinion, no reason why both sheep and cattle should not be extensively and successfully raised to yield the great profits of 40 or 50 per cent., or even more, on the capital invested—returns not unusual in Colorado and New Mexico. But as in the case of sheep the profits are mainly derived from the sale of the wool, and not from the sale of the meat, he would recommend that in all cases the class of sheep be carefully improved, in order that the greatest amount of wool, and of the most valuable kind, may be obtained. The native ewes make excellent mothers, and the lambs of the first cross show in the first year a marked improvement in the amount and texture of the wool produced. With cattle the results of careful crossing are nearly the same; the short-horn half-breeds are more valuable and more remunerative than their Texan mothers, and the crosses should be improved year by year until hardly a trace of the mixed descent can be discovered.

The region is still in want of railway accommodation. The present terminus of the Denver and Rio Grande Railway at Pueblo is distant about 230 miles from Fort Bascom, in the extreme south of the company's property. The road is graded as far as Cucharas, 54 miles nearer Bascom, and every effort will be made to complete the line to Trinidad (about 137 miles from Bascom) before the end of next year. But the effects of last year's financial panic in the States have not yet passed away, and although the Denver and Rio Grande Company has met all its obligations with punctuality, and has paid its coupons out of net profits, yet at this time the directors will, he fears, find much difficulty in raising sufficient capital for the energetic pushing forward of their road to the South. The Atchison, Topeka, and Sante Fé Railroad, though commenced and supported wholly by wealthy eastern and especially Boston capitalists, has not met with the success which was anticipated for it, and the failure to pay the coupons due this year has probably interfered with the further construction of the road. This may be the reason why the directors, instead of boldly pushing the road to the south-west in the direction indicated by the name of the company, have, it would seem, thought fit to turn in the first place westwards in the direction of Pueblo, the present terminus of the Denver and Rio Grande Railway, and compete with the Kansas Pacific Company for the development of the fertile Arkansas Valley. Mr. Gardyne cannot but think that this course, if finally adopted, will interfere with the future success of the Atchison, Topeka, and Santa Fé Company, whose resources may be employed in useless rivalries with the Kansas Pacific Company (which already touches the Arkansas Valley at Las Animas), rather than in pushing forward to the point originally aimed at in New Mexico.

In the present state of financial distrust no progress can be made with the Atlantic and Pacific Railroad, the most important—at least as regards the company's estate, through which the line, as surveyed, will pass—of all the roads trending towards New Mexico. It is completed, and now in operation as far as Vinita, 330 miles from its starting point at St. Louis. The probable early conversion of the Indian territory into a territory under the name of Ocklohama, with a constitution similar to those possessed by New Mexico and Colorado, will, it is anticipated, materially aid the enterprise, for the local Legislature will, under the constitution, be able directly to assist in its construction by the grant of land and cash subventions. The people of New Mexico are fully alive to the importance of railroad communication with the East.

In conclusion, Mr. Bruce-Gardyne congratulates the shareholders on the possession of a tract of country—speaking roughly, 1100 square miles in extent, or four times as large as the county of Middlesex—under one of the finest climates in the world, richly pastured, plentifully supplied with water, and with extensive bottom lands of extraordinary fertility. More than this, the company's estate, if not rich in minerals, is in the heart of a territory known to possess mineral wealth, perhaps not inferior to any part of the North American continent, and which must before long, by its mining population, find at home almost unlimited markets for the productions of its agricultural and stock-raising area. No doubt the great want of the Territory is at present railway communication, but that want, in his opinion, rather affects the large towns, like Santa Fé, Las Vegas, and Albuquerque, and the mining districts on the slopes of the Rocky Mountains, than the stock-producing tracts, which are not dependent on the presence of a large population, at any rate, for the development of their wealth.

MINING IN UTAH—CHICAGO SILVER MINING COMPANY.

We have just received from Mr. Edward J. Dowlen a brief account of the Chicago Silver-Lead Mine, now being operated by an English company, which we publish with much pleasure, as it shows that the present and future prospects of this enterprise are of a most cheering character, and must be highly gratifying to English stockholders in Utah and Nevada mines, whose investments have been anything but satisfactory or profitable. Mr. Dowlen is well-known to our Colorado people. He was manager of the Clifton Mine in Russell district, near Central City, almost from the time of its commencement, and was always esteemed for his extreme gentlemanly and courteous conduct. We hope to frequently have communications from him and his immediate neighbours, and more especially when they send us such neat, concise, and comprehensive articles as the one which we now present to our readers. We should like to obtain information on the geology of the district, which, when received, our draughtsman shall work up in the form of sections, which will help to illustrate the general formation, and tend to explain the deposition of the mineral deposits.

Salt Lake City, Sept. 25.—In accordance with your request, I have much pleasure in handing you the following particulars relative to the property of the Chicago Silver Mining Company, of London, with which I now have the honour of being connected:—The mine is situated on the north side of Hidden Treasure Hill, Dry Canyon, Toole county, Utah Territory, near the apex of the divide between Ophir and Dry Canyon, and not less than 12,000 ft. above the level of the sea. It consists of a series of undeveloped and two main pipes or shimneys carrying ore known respectively as the Chicago and Rambler shafts, the former being now down from surface 950 feet and the latter 750 feet. These pipes run parallel to each other, and preserve a somewhat irregular course, it being N. 35° W. The country rock is limestone, sometimes quite crystalline. At Chicago shaft bottom the ore body is 3 ft. square, consisting of carbonates in an advanced state of decomposition, red oxide of iron, and fine sand particles of lime and various spars, with some galena intermixed throughout, the whole being enclosed in a green carbonate copper cases 3 in. in width. It is moderately easy to work, and although at this moment somewhat pinched, the general appearance for the future is favourable. At the bottom of the Rambler the body is 8 ft. square, having improved to this extent from 3 ft. in the last few days, the ore being composed principally of grey carbonates and galena mixed. We are engaged in blasting a huge boulder of rock lying to the right of the ore body. When this is done the cars will be carried down to the face of the ore, and at least 20 tons per day extracted from this sinking alone. The development here is highly encouraging for the future value and prospects of the mine. As in all mines, the value of the ore varies. I have obtained assays from samples that gave 112 ozs. of silver and 74 per cent. of lead (grey carbonate), and we have about 6 in. of black crystallised lead, which runs 73 per cent. lead and 24 ozs. of silver to the ton, but the general average assay of the ore in bulk is about 30 per cent. lead and 28 ozs. of silver. As a flux, the ore is perfect, running splendidly in the furnace alone. By its means we are enabled to smelt almost any refractory rock that presents itself, which renders the product of the mine particularly valuable, and to a great extent compensates for its somewhat low grade. Our output is at present 15 tons per day; this is liable to be increased immediately by the improved condition of the Rambler shaft, and by its not improbable junction with the Chicago at some depth below the limits of superficial disturbance hitherto unreached by us. Surely two pipes such as these, having held out from the surface, carrying ore bodies varying from 2 to 30 ft. square, and preserving a fairly uniform course, are bound to have a big parent somewhere below, which we, if sufficiently persevering, are certain to find. The buildings here comprise an engine-house, covering a 20-horse power horizontal engine, boarding and foreman's houses, with office and sleeping rooms for men. They are conveniently arranged, and have a substantial and permanent appearance. The mine is under the able management of Mr. L. D. Davis, a practical miner of many years experience, whose superior it would be difficult to find in any mining country.

TRAMWAY.—Upon being hoisted to the surface, the ore is dumped into a bin and thence to the buckets on an automatic wire-tramway. This is 1¼ mile long, and conveys the ore over a most rough and precipitous mountain to the lower bin at the foot of the same; thence it is hauled by mule teams to the furnace of the company on the east shore of the Rush lake, 7 miles distant. The automatic action of this endless wire-way is quite familar to you, and is similar to that in use at the Terrible Mine, Georgetown, Colorado. By its means we carried the product of the mine last winter to the mouth of the canyon with from 3 to 10 feet of snow on the ground, and all other hauling being impossible for a certain period of bad weather. A saving of not less than $5 per ton is effected by this most simple, yet complete, method of aerial transportation.

The FURNACES are situated on the east side of Rush lake, 1½ mile south from the town of Stockston, Toole county. Two stacks are built at present of the ordinary vertical blast pattern; a third will shortly be erected. They are driven by a 40-horse power horizontal steam-engine, the blast being produced from two No. 5 Root blowers, with adjustable blow-off valves on the mains, thereby facilitating working either furnace at will, without interfering with the speed of the engine. The most notable feature in the construction of the furnaces is a patent fume condensing chamber, which placed conveniently between the two stacks arrests the lead particles as they pass through before finally escaping into the open air at the top. They produce an average weight of about 2500 lbs. per day. One furnace only has been used since the company commenced operations; a second will be started about the 5th proximo. Furnace No. 1 has now been running uninterruptedly for 124 days, and will, I think, double this length of time before it is found necessary to rebuild. The daily capacity is from 20 to 30 tons of ore, producing from 5 to 8 tons of bullion, according to the character, percentage, &c., of the charges. The consumption of fuel is about 25 bushels of charcoal, obtained from a pinion pine timber region some 30 miles south, and from 40 to 50 lbs. of Connelsville coke to the ton. Charcoal costs from 18 to 22 cents per bushel, and coke $40 per ton delivered. I could hand you figures relative to the costs of smelting, percentage, &c., to which the furnace works, which would show conclusively that both operations are of a highly satisfactory character. I may add that this is largely due to the head smelter—Mr. J. D. Williams, a Welshman of great experience, in the possession of whose services the company are exceedingly fortunate. Water is obtained from wells both inside and outside the furnace building; the tank capacity is 14,000 gallons, supplied by a Blake special, and ample hose is at hand for extinguishing fires. From a sanitary point the works are perfect, not a man has been leaded or even sick since we fired up 13 months ago; cattle browse, and herbage grows luxuriantly under the very shadows of the smoke stack. The buildings comprise furnace and engine houses, office, assay office, sampling room, stable for 50 animals, boarding and lodging house for 30 men, all well built, solidly constructed, and admirably arranged for their respective purposes.

The FINANCIAL CONDITION of the company is very satisfactory, and promises to improve largely in the immediate future. We are now earning and remitting 1 per cent. per month upon the paid-up capital of the company, which is truly a phenomenon in the present ruinously depressed state of Western American mining. At this time the Chicago seems the only bright star in the Utah firmament, as far as English investments are concerned, yet many local mine owners are doing a lucrative business. I write from the knowledge of the facts when I say that every effort will be made by the management by means of regular and legitimately-earned remittances to convince English capitalists that in spite of the numerous miserable failures made in the past, and given integrity, ability, and those other qualities which are equally necessary in all business enterprises, there are few fairer fields in the wide world for the profitable investment of capital than exist in the silver-lead mines of Utah.

E. J. DOWLEN.

—*Denver Mining Journal.*

TREATMENT OF PYRITES.—At the Morning Light Company's claim, Sandhurst, Australia, they are about to test Meyerhoff's improved roasting, grinding, and amalgamating process. The pyrites are made up into round lumps about the size of half a brick, with a hole in the centre to allow the fire to burn it right through. One-fourth clay is mixed with them to give the required consistency, and the whole is moistened with saline water; the action of the fire on the salt purifies the gold, and also causes the fine gold to run into globules. This done, the pyrites are ready for the oven, which is a vertical one, circular in form, with a centre column into which the prepared pyrites are placed by means of a revolving feeder. There are two furnaces at the base, the spiral flues of each going round the oven to the top, with gratings at short intervals, through which the fire has access to the pyrites; the only exit for the fumes and smoke is through a pipe leading from the top of the oven to the ground, where at a convenient distance a blast fan is fixed, which draws the fumes and forces them into a tank of water, where they are instantly condensed. A great advantage is here gained, as no obnoxious fumes escape from the works, and also on account of the quicksilver being saved. An oven, 15 ft. high, 10 ft. wide at the top, will roast a charge of pyrites in an hour, and it is calculated to burn 50 tons a week. By the oven being made larger a greater quantity can be put through. After the pyrites bricks have been burnt, the next process is to crush them, which is done in a roller mill. They are then passed through grinding mills, and finally amalgamated. In Meyerhoff's amalgamator false bottoms, which are made of a combination of metals, are placed inside the pan or amalgamator, the inside of which is of the same composition; the effect of this is to attract the finest of gold dust. Samples of the gold so obtained were inspected, and appeared as fine as flour, and of a slightly rusty colour, consequent on its contact with the metals. This, however, would not deteriorate its quality, except in an infinitesimal degree. The cost of the works is small when compared with the quantity of gold saved, which, it is believed, will be far greater than that retained by other modes of treatment.

SALT MINES AT CRACOW.—This vast depth is divided into four distinct storeys or fields, one below the other. In the second storey is a great lake, 650 ft. long and 40 ft. deep, formed of the salt water that trickles through the strata. The visitor is rowed across this subterranean sheet of water, and after he has arrived at the further shore and descended to the third storey, he learns, to his suprise, that the lake he has just traversed is directly over his head. The several storeys are simply immense excavations out of the solid salt, but much artistic taste has been displayed through successive generations in the decoration of these chambers. The chapel in particular consists of a beautiful Gothic temple, dedicated to St. Anthony, and contains many statues and obelisks, all formed of rock-salt, and an alter, pulpit, &c. The grand reception chamber is a gigantic hall, the height from the floor to the ceiling being within 50 ft. as great as that of the Monument. In this hall the members of the Imperial Family are received when they visit the mines; and this together with the principal passages and other chambers, is then brilliantly illuminated, the crystals of rock-salt sparkling exquisitely in the blaze of torches. There is room for at least 1000 persons to dine in this chamber without inconvenience, and its dimensions are so vast that, despite the number and brilliancy of the torches, and notwithstanding that the glittering walls and roof tend to reflect the blaze, the eye in vain attempts to fathom its vastness—*Cassell's World of Wonders.*

PREPARATION OF OZONE.—The fundamental principle of novelty in the preparation of ozone, according to the invention of Mr. ALVARO REYNOSO, of Paris, consists in operating upon oxygen gas compressed to several atmospheres. Electric sparks are caused to pass through the mass by means of particular arrangements, which increase the surfaces, and multiply the number of the electric sparks. The apparatus is composed of a vessel capable of resisting great pressure. The electric sparks are disengaged between the two conductors terminated by several points placed at suitable distances. Preparation of azotic acid and azotates by means of compressed air. Air is compressed to several atmospheres above water or alkaline bases, or carbonates, and through the same are passed electric sparks produced by means of a Ruhmkorff coil placed in communication with an electro-magnetic machine, moved either by hydraulic power, the wind, by compressed air, or otherwise. The sparks will be disengaged by points or systems similar to those above mentioned with regard to ozone.

IMPROVED RAILWAY SIGNAL.—By the invention of Mr. AUSTIN CHAMBERS, of Marylebone-road, the wires or metal rod connections usually employed as media of communication between the signalling boxes, stations, or places, and the semaphores and lamps or other signalling bodies or objects are dispensed with, and in lieu of actuating or changing the positions of such signalling bodies or objects by the direct application thereto of mechanical means, they are actuated pneumatically—that is to say, communication is established between the signalling bodies or objects and the boxes, stations, or places whence the same are to be operated by suitable pipes, tubes, or passages, and the necessary movements or changes of position of the said signalling bodies or objects are affected by changing the density or pressure of a volume, or volumes, of air or gas contained in such pipes, tubes, or passages. In apparatus according to this invention the ordinary or normal pressure in the pipes, tubes, or passages is that of the external atmosphere for the time being, or thereabout, and when this pressure prevails in the said pipes, tubes, or passages the signalling bodies or objects are invariably in the positions indicating danger, their movement into or towards the positions indicating safety or caution being effected by augmenting or diminishing the pressure of the air or gas in the pipes, tubes, or passages. These augmentations or diminutions of pressure are effected, as required, by pumps, collapsible vessels, compressors or exhausters, or rarefiers, or apparatus resembling bellows, or gas-holders, or governors connected with the signalling levers or apparatus, so as to be actuated for compressing or rarefying the air when such levers are moved, or in some cases accumulators or reservoirs of compressed air or gas, or exhausters or vessels in which a partial vacuum has been established and is maintained, may be used in conjunction with the pipes, tubes, or passages communicating with the signalling bodies or objects, as aforesaid; and the temporary augmentations or diminutions of pressure in the said pipes, tubes, or passages may be effected by the opening of suitable cocks or ways establishing communications with such accumulators or reservoirs of compressed air or gas, or with the exhausters or rarefiers, as the case may be, so as to admit compressed air or gas into the pipes, tubes, or passages, or to partially exhaust therefrom the air or gas they contain. The invention further more relates to the arrangement of apparatus for working signals on the above principle. It likewise embraces novel arrangements for signalling by lights, in which the light or the coloured glasses are carried by swinging arms or brackets.

IMPROVED ROLLING MILLS.—The invention of Messrs. STANFORD and BOTT, of Masborough, relates to improvements in rolling-mills or machinery for rolling iron and steel wire, or other like sections of rolled iron or steel. For this purpose a wrought-iron carrying bars is arranged below the rolls, so as to work in a slide with brass bearings to carry the bottom loose spindle, which rises and falls to suit any diameter of rolls, and can easily be adjusted as the brasses wear thinner, until the brasses are worn through, thus effecting a great saving in the brass bearings. The chucks and brasses for the necks of the rolls are about half the usual size, the brasses being held in the chucks by dovetails, which are cast solid on to the back of the brass bearing. A brass is pressed down on the neck of the bottom roll by a spring, which also presses the chuck and brass up against the neck of the top roll. The point of the guides are kept in their proper place by pins or studs, which work through a peculiarly formed nut; the guides are also held firm by the studs and wedges. The guide-box is held firm in its position by bolts and bearers secured in the standards. Springs are arranged under the gland of the standards to keep the glands perfectly steady. The glands are screwed down so as to put a constant weight or pressure on the necks of the rolls.

COATING IRON PIPES.—Mr. S. DARWIN, of Shrewsbury, has patented an invention which has reference to the lining or coating of either wrought or cast iron pipes or tubes with lead, tin, or other suitable metal or alloy, or gutta percha, or a mixture of gutta percha and other material suitable for preserving and increasing the durability of the pipe, and enabling it to withstand, when laid beneath the surface of the ground or otherwise, the action of any fluid, liquid, or other matter to which it may be subjected; and for lining consists in placing within the iron pipe, which may be heated or not, an iron or other suitable core or spindle, leaving a space between it and the pipe corresponding to the thickness of the intended lining. The lead, tin, or other material is then melted and forced in by hydraulic or other pressure between the tube and the core. When the lining has cooled sufficiently, the core is withdrawn or removed, and the operation repeated for an additional length of the pipe, where the pipe is too long to admit of the whole being completed in one operation. For coating the pipe, a mould or barrel is passed over the pipe intended to be coated, sufficient space being left between it and the pipe to admit of the desired thickness of coating being applied, the operation of coating being similar to that of lining.